CHAPTER 41

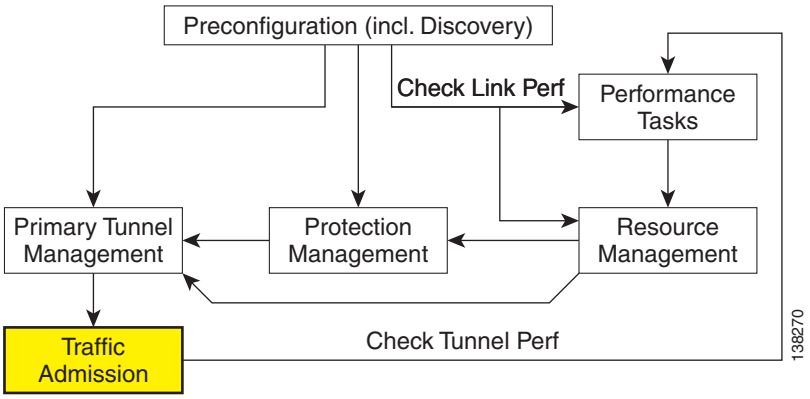
TE Traffic Admission

TE Traffic Admission is the first step towards enabling services on TE tunnels. There are a number of mechanisms that can be used for forwarding traffic into a tunnel to provide basic IP connectivity. The current implementation of Cisco Prime Fulfillment Traffic Engineering Management (Prime Fulfillment) uses both static routing and autoroute announce to inform the routing protocol of the tunnel's presence. Autoroute announce can be also used as part of the routing protocol calculations.

The TE Traffic Admission tool is used to assign traffic to traffic-engineered tunnels.

The highlighted box in Figure 41-1 shows where in Prime Fulfillment TE Traffic Admission occurs.

Figure 41-1 Prime Fulfillment Process Diagram - TE Traffic Admission



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Overview

Static routing is perhaps the simplest way of forwarding traffic into a tunnel. Traffic that matches a target destination prefix is routed into a particular tunnel.

While this achieves the basic goal of directing traffic into a given tunnel, this approach has limitations. First, the offering of differentiated Class-of-Service (CoS) treatment is limited to destination-based CoS. As each source PE serves as an aggregation point for a number of traffic flows, there is no way to restrict which traffic receives preferential treatment to a destination because access to a tunnel is through general routing. Secondly, it does not generally provide a scalable solution because the static routing mechanism must capture both the large number of subnets that can be served by each PE router, and it must be able to further capture CoS treatment for each of these subnets.

Static routing works best if there is no need to provide differentiated CoS treatment by destination. That is, all packets destined for one or more particular prefixes all receive the same CoS.

Creating a TE Traffic Admission SR

The TE traffic admission tool in Cisco ISC TEM only displays primary tunnels (managed or unmanaged) when they are associated with a TE provider and the tunnels are not already associated with a TE Admission SR. That is, the tool is only intended for admitting new traffic onto tunnels currently not carrying any traffic.

To create a TE Traffic Admission SR, use the following steps:

Step 1 Choose **Traffic Engineering**.

Step 2 Click **TE Traffic Admission**.

The TE Traffic Admission Tunnel Selection window appears.

Note If this window does not open, either no tunnels are associated with a TE provider or any tunnels associated with a TE provider are already tied to a TE Admission SR.

The TE Traffic Admission Tunnel Selection window lists all primary tunnels, both managed and unmanaged, that are not already associated with an admission SR.

The **Deploy Status** can be **Pending**, **Deployed**, or **Functional**.

Note Backup tunnels are not displayed in the TE Traffic Admission Tunnel Selection window.

Step 3 Select a TE tunnel by clicking the corresponding radio button and clicking **Select**.

The TE Traffic Admission SR window appears.

The main TE Traffic Admission SR window includes the following fields:

- **Tunnel**—Tunnel name.
- **Description**—Service request description.
- **EXP** [IOS devices only]—Class marking bits for CBTS.
- **Policy** [IOS XR devices only]—Policy marking bits for PBTS.

- **Autoroute announce**—Used to specify that the Interior Gateway Protocol (IGP) should use the tunnel (if the tunnel is up) in its enhanced shortest path first (SPF) calculation.
  - **On**—Autoroute announce is enabled.
  - **Off**—Autoroute announce is disabled.
- **Autoroute Metric**—Used to specify the Multiprotocol Label Switching (MPLS) traffic engineering tunnel metric that the Interior Gateway Protocol (IGP) enhanced shortest path first (SPF) calculation uses.
  - **Absolute**—Absolute metric mode; you can enter a positive metric value.
  - **Relative**—Relative metric mode; you can enter a positive, negative, or zero value.
- **Static Routes**—Lists any static routes that the tunnel uses.
- **Destination**—Name of the static route for the tunnel destination.
- **Distance**—Administrative distance (cost).

Note If TE Traffic Admission SR attributes such as PBTS attributes are changed outside Prime Fulfillment and a TE discovery task is run, the discovery task logs will not report a discrepancy warning and the repository will be updated with the new configuration from the device.

Step 4 When filling out the form, if **Autoroute Announce** is set to **On**, indicate whether **Autoroute Metric** should be **Absolute** or **Relative**.

Step 5 You can also set an optional autoroute metric.

For the relative metric, the range is -10 to 10, for the absolute metric, the range is 1 to 2147483647.

Note CBTS is supported in IOS and PBTS is supported in IOS XR. If the tunnel head router is running IOS XR, the **EXP** fields will not be present and are replaced with the **PBTS** fields.

When clicking the **Add** button, the Add TE Static Route window appears.

Step 6 In the Add TE Static Route window, specify at a minimum a **Destination** IP address (w.x.y.z/n).

Optionally specify an administrative **Distance**. It is recommended that you either define one or more static routes or, alternatively, that you define an autoroute.

Step 7 Click **OK** to accept the entries or **Cancel** to exit the window.

In the main TE Traffic Admission SR window, you can add another TE Static Route or edit existing routes.

Step 8 Click **Save** to save the service request.

The Service Requests window appears with the TE Traffic Admission SR in **REQUESTED** state and the Operation Type set to **ADD**.

For more information on working with service requests, see the managing service requests part elsewhere in this guide.

To deploy the service request from the Service Requests window, see Deploying a TE Traffic Admission SR, page 41-4.

Deploying a TE Traffic Admission SR

As opposed to the TE Primary Tunnel SR, Backup Tunnel SR, and TE Resource Modification windows, a TE Admission SR must be deployed from the general Service Request Manager window.

To deploy a TE Admission SR, use the following steps:

Step 1 Choose **Operate > Service Request Manager**.

The Service Requests window appears.

The Service Requests window includes the following elements:

- **Job ID**—Job ID for the SR.
- **Data Files**—This field is used for variable substitutions via templates and currently do not apply to TEM SRs.
- **State**—Indicates whether the tunnel state is DEPLOYED or NOT DEPLOYED and whether it is Conformed or Not Conformed.
- **Type**—The type of service request, indicating which service issued the request. For a detailed description of the possible service types, see the managing service requests part elsewhere in this guide.
- **Operation Type**—SR operation on the tunnel, can be either **ADD, MODIFY, DELETE,** or **ADMIT**. Applicable only to tunnels in the current SR.
- **Creator**—ID for the user who created the SR.
- **Customer Name**—Name of the customer to which the SR applies.
- **Policy Name**—Name of the policy associated with the SR.
- **Last Modified**—Date and time when the SR was last modified.
- **Description**—SR description provided by the user.

Step 2 Select the desired service request and click **Deploy**.

A drop-down menu appears under the **Deploy** button. In the drop-down menu, select **Deploy** or **Force Deploy**. After having been successfully deployed, the **State** of the SR changes to **Deployed**.

The Service Requests window (**Operate > Service Request Manager)** appears and displays the state of the deployed SR.

For more information on working with service requests, see the managing service requests part elsewhere in this guide.

Other Traffic Admission SR Operations

As opposed to other service requests, TE Traffic Admission SRs can be decommissioned in the Service Requests window.

Edit and decommission operations for TE Traffic Admission service requests are handled in the Service Request Manager window. These operations are described in the managing service requests part elsewhere in this guide.

Viewing the SR State

To view a service request state, go to **Operate > Service Request Manager**.

If the SR does not enter the **Deployed** state, go to the **Task Logs** window to see the deployment log (**Operate > Task Manager > Logs**) as described in SR Deployment Logs, page 56-1.